

CLAIMS

1. A method for operating a cryocooler for providing refrigeration to a refrigeration load comprising:

(A) generating refrigeration by operating a cryocooler having a regenerator, a cold heat exchanger and a thermal buffer tube;

(B) monitoring temperature trending of at least one of the regenerator, the cold heat exchanger, the thermal buffer tube and the refrigeration load, and employing the temperature trending to calculate a service time; and

(C) servicing the cryocooler if the calculated service time is less than a predetermined value.

2. The method of claim 1 wherein the monitored temperature trending is the rate of temperature change of the cold heat exchanger.

3. The method of claim 1 wherein the monitored temperature trending is the circumferential temperature variation of the regenerator.

4. The method of claim 1 wherein the monitored temperature trending is the temperature profile of the thermal buffer tube.

5. The method of claim 1 wherein the monitored temperature trending is the temperature of the refrigeration load.

6. The method of claim 1 wherein the predetermined value is ten days.

7. The method of claim 1 wherein the cryocooler is operating at less than 30 hertz.